

REMARKSI. Introduction

In response to the Office Action dated November 26, 2007, which was made final, and in conjunction with the Request for Continued Examination (RCE) submitted herewith, claims 3, 4, 6, 7, 10, 11, 13 and 14 have been amended. Claims 3-7 and 10-14 remain in the application. Re-examination and re-consideration of the application, as amended, is requested.

II. Prior Art RejectionsA. The Office Action Rejections

On pages (3)-(9) of the Office Action, claims 3-6 and 10-13 were rejected under 35 U.S.C. §103(a) as being obvious in view of the combination of U.S. Patent 6,466,953 (Bonney) and U.S. Patent Publication No. 2002/0083076 (Wucherer). On pages (10)-(12) of the Office Action, claims 7 and 14 were rejected under 35 U.S.C. §103(a) as being obvious in view of the combination of Bonney and U.S. Patent Publication No. 2003/0031380 (Song).

Applicants' attorney respectfully traverses these rejections.

B. The Applicants' Independent Claims

Independent claims 3, 4, 6, 7, 10, 11, 13 and 14 are generally directed to operating a graphics program in a computer.

Claims 3 and 10 both recite performing one or more functions of a Sheet Set Manager in the graphics program,

(a) wherein the Sheet Set Manager manages one or more Sheet Sets, Subsets of the Sheet Sets, and Sheets, wherein each of the Sheet Sets comprises a collection of the Subsets of the Sheets and the Sheets, each of the Subsets of the Sheets comprises a collection of the Sheets, and each of the Sheets comprises a drawing, layout or view, and the Sheet Set Manager displays a logical structure for the Sheet Sets, the Subsets of the Sheet Sets, and the Sheets on the computer as a hierarchical tree representation, and the hierarchical tree representation of the Sheet Sets shows the Subsets of the Sheet Sets and the Sheets contained within the Sheet Sets, as well as the Sheets contained within the Subsets of the Sheet Sets; and

(b) wherein the Sheet Set Manager is displayed as a window that includes a "Sheet List" function for displaying a page-by-page summary of the Sheet Sets, the Subsets of the

Sheets contained within the Sheet Sets, and the Sheets contained within the Sheet Sets and the Subsets of the Sheet Sets.

Claims 4 and 11 both recite performing one or more functions of a Sheet Set Manager in the graphics program,

(a) wherein the Sheet Set Manager manages one or more Sheet Sets, Subsets of the Sheet Sets, and Sheets, wherein each of the Sheet Sets comprises a collection of the Subsets of the Sheets and the Sheets, each of the Subsets of the Sheets comprises a collection of the Sheets, and each of the Sheets comprises a drawing, layout or view, and the Sheet Set Manager displays a logical structure for the Sheet Sets, the Subsets of the Sheet Sets, and the Sheets on the computer as a hierarchical tree representation, and the hierarchical tree representation of the Sheet Sets shows the Subsets of the Sheet Sets and the Sheets contained within the Sheet Sets, as well as the Sheets contained within the Subsets of the Sheet Sets; and

(b) wherein the Sheet Set Manager is displayed as a window that includes a "View List" function for managing views of the Sheets in the Subsets of the Sheet Sets and the Sheet Sets.

Claims 6 and 13 both recite performing one or more functions of a Sheet Set Manager in the graphics program,

(a) wherein the Sheet Set Manager manages one or more Sheet Sets, Subsets of the Sheet Sets, and Sheets, wherein each of the Sheet Sets comprises a collection of the Subsets of the Sheets and the Sheets, each of the Subsets of the Sheets comprises a collection of the Sheets, and each of the Sheets comprises a drawing, layout or view, and the Sheet Set Manager displays a logical structure for the Sheet Sets, the Subsets of the Sheet Sets, and the Sheets on the computer as a hierarchical tree representation, and the hierarchical tree representation of the Sheet Sets shows the Subsets of the Sheet Sets and the Sheets contained within the Sheet Sets, as well as the Sheets contained within the Subsets of the Sheet Sets; and

(b) wherein the Sheet Set Manager is displayed as a window that includes a "Resource Drawings" function for accessing files underlying the Sheets in the Subsets of the Sheet Sets and the Sheet Sets.

Claims 7 and 14 both recite performing one or more functions of a Sheet Set Manager in the graphics program,

(a) wherein the Sheet Set Manager manages one or more Sheet Sets, Subsets of the Sheet Sets, and Sheets, wherein each of the Sheet Sets comprises a collection of the Subsets of the Sheets and the Sheets, each of the Subsets of the Sheets comprises a collection of the Sheets, and each of the Sheets comprises a drawing, layout or view, and the Sheet Set Manager displays a logical structure for the Sheet Sets, the Subsets of the Sheet Sets, and the Sheets on the computer as a hierarchical tree representation, and the hierarchical tree representation of the Sheet Sets shows the Subsets of the Sheet Sets and the Sheets contained within the Sheet Sets, as well as the Sheets contained within the Subsets of the Sheet Sets; and

(b) wherein the Sheet Set Manager provides a function for displaying the Sheet Sets, Subsets of the Sheet Sets and Sheets as an organized collection of graphical thumbnail previews or properties.

C. The Bonney Reference

Bonney describes an information display device capable of displaying logical display planes includes a first part for storing items of display plane forming information respectively defined for the logical display planes, and a second part for displaying the logical display planes on a screen part in accordance with the items of the display plane forming information, wherein the items of the display plane forming information of logical display planes that have a hierarchical relationship include information describing the hierarchical relationship and commonly own attribute information concerning a component commonly used in the logical display planes having the hierarchical relationship.

D. The Wucherer Reference

Wucherer describes a system and method for linking computer aided design (CAD) elements with non-graphical information within a database. In one embodiment of the method the database receives and stores first CAD element data generated by a first computer system in data communication with the database. This first CAD element data represents a first CAD element displayable on a monitor of a computer system such as a CAD computer system. Thereafter, a link is created in the database between the stored first CAD element data and one of a plurality of component specifications stored in the database. Each of the plurality of component specifications comprises non-graphical descriptive data that may describe a component of a construction project.

In one embodiment, the first computer system is coupled to the database via the Internet. In another embodiment, each of the component specifications include at least one database object.

E. The Song Reference

Song describes a new method and apparatus for visualization and manipulation of real 3-D objects. This new approach utilizes compressed digital video taking advantage of modern video compression technology. The entire system consists of the image acquisition device, the viewing/manipulation program and the 3-D image database. The system first captures images of the object from all possible view angles as a sequence of images (a video). As neighboring images within the sequence will generally be similar, the sequence will be amenable to standard video compression techniques such as MPEG. The acquired video data (rendition of a real 3-D object) is then stored into a database for later access, for instance, over the Internet. Through specially developed software, the stored data can be manipulated while viewing the object. The user simply inputs—via a mouse, for instance - the view angle and the software automatically displays the appropriate frame within the video (stored data). The software allows various object manipulations such as rotation in arbitrary direction, as well as zoom, pan, etc. A particular implementation of the viewing program using a Pentium III processor, randomly accessing an MPEG sequence, through pre-decoding of certain anchor frames, is able to decode fast enough for users to perform real-time manipulation of the object. The captured 3-D image data of an object is stored into a centralized (or distributed) database and users may access the data through the assigned URL for the object over the Internet. The data may or may not be password protected. As such, the overall system is an implementation of a one-stop service for individuals wishing to provide 3-D visualization of real 3-D objects over the Internet.

F. The Applicants' Invention is Patentable Over the References

The Applicants' invention, as recited in amended independent claims 3, 4, 6, 7, 10, 11, 13 and 14, is patentable over the combination of Bonney and Wucherer, as well as the combination of Bonney and Song, because it recites a specific combination of elements not shown by the references.

The Office Action, on the other hand, asserts that all the elements of independent claims 3-6 and 10-13 are shown in the combination of Bonney and Wucherer and that all the elements of independent claims 7 and 14 are shown in the combination of Bonney and Song.

However, Applicants' attorney asserts that, when placed in context, each of these combinations teach something different than Applicants' claimed inventions.

1. **Bonney does not describe a Sheet Set Manager that manages Sheet Sets, Subsets of the Sheet Sets, and Sheets as recited in independent claims 3, 4, 6, 7, 10, 11, 13 and 14.**

With regard to independent claims 3, 4, 6, 7, 10, 11, 13 and 14, the Office Action asserts that Bonney teaches a CAD program capable of performing the functions of a Sheet Set Manager. At the locations indicated by the Office Action, however, Bonney merely describes drawings generally, where a drawing may include views and may be comprised of multiple sheets. Consider, the description in Bonney found at the following cited locations:

Bonney: col. 1, lines 17-36

Once a designer completes a design using a computer aided design (CAD) application, often times, the designer proceeds to create drawings defining the design. Because these designs may be defined using geometric models, these drawings can be very complex and detailed depending upon the complexity of the geometric models. These drawings facilitate conveying of details of the models to people without requiring constant interrogation of the models using the CAD application.

Drawings, in general, may include many details of the models such as, but not limited to, alternative views, section views, detail views of certain aspects of each of the models, and in particular, assembly views to illustrate mating components of each of the models. Because so many aspects of the model(s) may be included within the drawing, the drawing may include many sheets, where each sheet illustrates a certain detail of a model. Depending upon the complexity of designs, a drawing may include numerous sheets showing many details.

paragraphs 15, 18-19, 55, 58 and 80-82. With regard to independent claims 4 and 11, the Office Action admits that Bonney does not teach a "View List" tab, but asserts that Wucherer does teach these claim elements at Fig. 15B and paragraphs 55, 58 and 80-82. With regard to independent claims 6 and 13, the Office Action admits that Bonney does not teach a "Resource Drawings" tab, but asserts that Wucherer does teach these claim elements at Fig. 15B and paragraphs 55, 58 and 80-82. These cited portions of Wucherer are set forth below:

Wucherer: Fig. 15b

Patent Application Publication Jan. 27, 2011 Sheet 18 of 18 US 2009/026079 A1

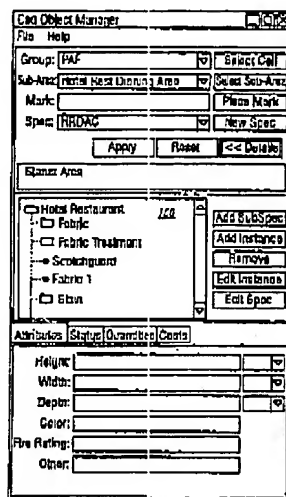


FIG. 15B

Wucherer: Para. 15

[0015] Designing and building a project is a complicated and long process that requires the diverse services of many participants. The present invention will be described with reference to the design and/or building of a construction project, it being understood that the present invention may find application in other disciplines. These design and build participants may include architects, structural engineers, mechanical engineers, electrical engineers, interior designers, etc. who are responsible for creating the design drawings for the project. The participants may include purchasing agents who are responsible for purchasing components (e.g., furniture, fixtures and equipment, etc.) for integration into the project. Contractors and subcontractors are needed to actually build the project according to the design plans. Expeditors are often needed to receive and route purchased components to the construction site when needed by contractors and subcontractors. The project participants may further include accountants who are responsible for tracking the project's fiscal budget and paying for components purchased. A project manager

may manage the participants, for example, by approving some or all changes to the project requested by the participants. Additionally, the project owner's participation is often needed to insure that the project progresses to his satisfaction from initial conception through completion.

Wucherer, Para. 18-19

[0018] When project participants (e.g., engineers, interior designers, etc.) receive initial prints of the project, the prints give very little information about the components graphically represented therein. Typically, the prints simply identify the components by title or type (e.g., "a table," "a window," "a backup power generator"). It is usually the responsibility of the engineers, interior designers, etc., to further define or specify the characteristics or attributes of components originally contained in the prints or components added to the prints. Some of this information may be entered onto the prints by the engineers or designers. However, it is more likely that a separate specification sheet is created by the engineers or designers for each component graphically represented on the print. Thus, an interior designer may create a separate specification sheet for each type of chair graphically represented in the restaurant print, wherein each specification sheet contains descriptive information (size, color, fabric, whether the fabric is treated, etc.) regarding a respective chair. Likewise, an electrical engineer may, for example, create a separate specification sheet for the graphically represented backup power generator describing, for example, the generator's size, power generation capacity, weight, etc.

[0019] Engineers and designers normally employ software applications for generating specification sheets for project components for which they have responsibility. These software applications generate electronic versions of specification sheets into which engineers or interior designers hand enter descriptive information of the corresponding component. Additionally, a reference to a graphical representation in a print is normally entered into each specification sheet so that each specification sheet can be associated with the respective component represented on the prints.

Wucherer, Para. 55

[0055] FIG. 4A shows, in block diagram form, database access/update processing module 26 in data communication with database 22. In one embodiment, database 22 includes project files 50-54, project component specification files 60-64, and library files 72-78. Each file may further contain a hierarchy of files more fully described below. Project files 50-54 correspond to respective design and build projects. Specification files 60-64 correspond to project files 50-54, respectively. The term files may be referred to as data units or structures in memory that store related data.

Wucherer, Para. 58

[0058] Specification files 60-64 of FIG. 4A correspond to files 50-54, respectively. Files 60-64 may contain a hierarchy of files that, in turn, contain component specifications. Each component specification may take form in a database object (or several database objects which are linked together) stored in the database 22. Fundamentals of Database Systems, Elmasri Narathe (1989) describes database objects and database links. A database object is well known in the object

oriented programming arts. Where the component specifications take form in database objects, several of the objects in the database may be instances of the same class of objects each of which contains different values for their instance variables.

Wucheter, Para. 80-82

[0080] With the component specification code entered into the Specification field, the user may activate the Apply button which causes the selected CAD element to be database linked to the component specification corresponding to the entered component specification code or name thereby creating an intelligent CAD object.

[0081] The user may activate the Details button to expand the CAD Object Manager and display information contained within the selected and linked component specification. For example, the expanded CAD Object Manager may display an Attributes tab of the selected and linked component specification which contains one or more fields each of which contains information describing a physical, functional or other attribute of the related component (e.g., the dining room chair). In the illustrated example, the Attributes tab includes Height, Width, and Depth fields for displaying dimensions of the chair defined by the exemplary Hotel Restaurant Dining Area Chair component specification, or a Color field for displaying a wood stain color of the chair defined by the exemplary Hotel Restaurant Dining Area Chair component specification. The expanded CAD Object Manager may display a Status tab which contains one or more fields (not shown) each indicating a status such as whether the component specification has been approved by necessary design participants of the project, whether the related component has been purchased, or whether the related component has been delivered to the project construction site. The Quantities tab may include a field (not shown) indicating the number of CAD elements linked to the instant component specification or a field (not shown) indicating a total number of the related component to be purchased. The Costs tab of the selected component specification may include a separate field (not shown) indicating the original or revised budget cost for the related component or a field indicating the actual cost of the related component. The information in a field of the tabs is modifiable by the user. For example, the user may change the stain color in the illustrated Color field. Further, a user may add a new field to a tab of a component specification. However, any given component specification may be linked to several CAD elements. A change to a component specification, whether adding a new field or changing information in a preexisting field, may simultaneously modify several intelligent CAD objects stored in the database 22.

[0082] The expanded CAD Object Manager also displays a tree in window 150 that identifies component specifications linked to the component specification identified in the Specification field. In the illustrated example, window 150 shows that the exemplary Hotel Restaurant Dining Area Chair component specification, identified as HRDAC, includes links to other component specifications designated Fabric 1 and Scotchguard which may relate to fabric and fabric treatment sub-components, respectively, of the exemplary dining room chair. Clicking on or selecting any of these linked component specifications causes the Attributes, Status, Quantities, and Costs tabs to be updated with fields of information from the linked component specification. A user, initiating the AddSubSpec button, can link the component specification identified in the Specification field to another component specification. For example, the user can add a component specification relating to a

particular wood stain of the Stain group file. The Remove button may be initiated by the user to remove a component specification linked to the component specification identified in the Specification field.

The above portions of Wucherer describe defining or specifying characteristics or attributes for components contained in a CAD project. However, these characteristics or attributes, which are used to generate "specification sheets" for the project components, are in no way related to the limitations of Applicants' claimed invention.

For example, the CAD Object Manager of Wucherer displays an Attributes tab that includes Height, Width, and Depth fields for a chair, a Color field for the chair, a Fire Rating field for the chair, and an Other field for the chair. In another example, the CAD Object Manager of Wucherer displays a Status tab that indicates whether a component specification has been approved by necessary design participants of the project, whether the related component has been purchased, or whether the related component has been delivered to the project construction site. In yet another example, the CAD Object Manager of Wucherer displays a Quantities tab that indicates the number of CAD elements linked to the component specification or a total number of the related component to be purchased. In still another example, the CAD Object Manager of Wucherer displays a Costs tab that includes a field indicating the original or revised budget cost for the related component or a field indicating the actual cost of the related component. Finally, the CAD Object Manager of Wucherer also displays a tree in a window that identifies linked component specifications, such as a chair component specification linked to fabric and fabric treatment sub-component specifications.

However, none of the Attributes, Status, Quantities and Costs tabs of the CAD Object Manager of Wucherer teach or suggest Applicants' claimed inventions.

With regard to independent claims 3 and 10, Applicants' attorney respectfully submits that the above portions of Wucherer do not teach or suggest Applicants' claimed limitations. Instead, the above portions of Wucherer merely describe a CAD Object Manager that refers to the Attributes, Status, Quantities, Costs, or Links of a component, but none of these functions relate in any way (other than being tabs) to a "Sheet List" function for displaying a page-by-page summary of the Sheet Sets, the Subsets of the Sheets contained within the Sheet Sets, and the Sheets contained within the Sheet Sets and the Subsets of the Sheet Sets.

With regard to independent claims 4 and 11, Applicants' attorney respectfully submits that the above portions of Wucherer do not teach or suggest Applicants' claimed limitations. Instead, the above portions of Wucherer merely describe a CAD Object Manager that refers to the Attributes,

Status, Quantities, Costs, or Links of a component, but none of these functions relate in any way (other than being tabs) to a "View List" function for managing views of the Sheets in the Subsets of the Sheet Sets and the Sheet Sets.

With regard to independent claims 6 and 13, Applicants' attorney respectfully submits that the above portions of Wucherer do not teach or suggest Applicants' claimed limitations. Instead, the above portions of Wucherer merely describe a CAD Object Manager that refers to the Attributes, Status, Quantities, Costs, or Links of a component, but none of these functions relate in any way (other than being tabs) to a "Resource Drawings" function for accessing files underlying the Sheets in the Subsets of the Sheet Sets and the Sheet Sets.

Moreover, like Bonney, nowhere do the above portions of Wucherer teach or suggest a Sheet Set Manager that manages one or more Sheet Sets, Subsets of the Sheet Sets, and Sheets, wherein each of the Sheet Sets comprises a collection of the Subsets of the Sheets and the Sheets, each of the Subsets of the Sheets comprises a collection of the Sheets, and each of the Sheets comprises a drawing, layout or view, and the Sheet Set Manager displays a logical structure for the Sheet Sets, the Subsets of the Sheet Sets, and the Sheets on the computer as a hierarchical tree representation, and the hierarchical tree representation of the Sheet Sets shows the Subsets of the Sheet Sets and the Sheets contained within the Sheet Sets, as well as the Sheets contained within the Subsets of the Sheet Sets.

3. Song does not describe allowing the viewing of the Sheet Sets, Subsets of the Sheet Sets and Sheets as an organized collection of graphical thumbnail previews or properties as recited in independent claims 7 and 14.

With regard to independent claims 7 and 14, the Office Action admits that Bonney does not teach allowing the viewing of the Sheet Sets, Subsets of the Sheet Sets and Sheets as an organized collection of graphical thumbnail previews or properties, but asserts that Song does teach these claim elements. These cited portions of Wucherer are set forth below:

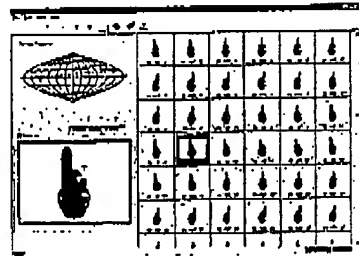
Song: Fig. 7

FIG. 7

From Application Publication No. 11, 2001, Sheet 1 of 11, U.S. Patent Application No. 11, 2001, Sheet 1 of 11

Song: Abstract

A new method and apparatus for visualization and manipulation of real 3-D objects are disclosed. This new approach utilizes compressed digital video taking advantage of modern video compression technology. The entire system consists of the image acquisition device, the viewing/manipulation program and the 3-D image database. The system first captures images of the object from all possible view angles as a sequence of images (a video). As neighboring images within the sequence will generally be similar, the sequence will be amenable to standard video compression techniques such as MPEG. The acquired video data (rendition of a real 3-D object) is then stored into a database for later access, for instance, over the Internet. Through specially developed software, the stored data can be manipulated while viewing the object. The user simply inputs—via a mouse, for instance—the view angle and the software automatically displays the appropriate frame within the video (stored data). The software allows various object manipulations such as rotation in arbitrary direction, as well as zoom, pan, etc. A particular implementation of the viewing program using a Pentium III processor, randomly accessing an MPEG sequence, through pre-decoding of certain anchor frames, is able to decode fast enough for users to perform real-time manipulation of the object. The captured 3-D image data of an object is stored into a centralized (or distributed) database and users may access the data through the assigned URL for the object over the Internet. The data may or may not be password protected. As such, the overall system is an implementation of a one-stop service for individuals wishing to provide 3-D visualization of real 3-D objects over the Internet.

Song: Para. 44

[0044] dr: differential change in the camera position

At the locations indicated by the Office Action, Song does not teach or suggest a Sheet Set Manager that provides a function for displaying the Sheet Sets, Subsets of the Sheet Sets and Sheets as an organized collection of graphical thumbnail previews or properties. Instead, Song merely

describes an image editor that displays multiple thumbnail images.

Moreover, Song, like Bonney, does not describe a Sheet Set Manager that manages one or more Sheet Sets, Subsets of the Sheet Sets, and Sheets, wherein each of the Sheet Sets comprises a collection of the Subsets of the Sheets and the Sheets, each of the Subsets of the Sheets comprises a collection of the Sheets, and each of the Sheets comprises a drawing, layout or view, and the Sheet Set Manager displays a logical structure for the Sheet Sets, the Subsets of the Sheet Sets, and the Sheets on the computer as a hierarchical tree representation, and the hierarchical tree representation of the Sheet Sets shows the Subsets of the Sheet Sets and the Sheets contained within the Sheet Sets, as well as the Sheets contained within the Subsets of the Sheet Sets.

Indeed, like Bonney, there is no recognition in Song of the concept of Sheet Sets or Subsets of Sheet Sets, as those terms are defined in Applicants' claims and specification, nor is there any recognition in Song of the hierarchical relationship between Sheet Sets, Subsets of Sheet Sets, and Sheets. Consequently, Song does not teach or suggest viewing of the Sheet Sets, Subsets of the Sheet Sets and Sheets as an organized collection of graphical thumbnail previews or properties.

4. Summary.

In summary, Applicants' attorney submits that independent claims 3, 4, 6, 10, 11 and 13 are allowable over Bonney and Wucherer, and that independent claims 7 and 14 are allowable over Bonney and Song. Further, dependent claims 5 and 12 are submitted to be allowable over Bonney and Wucherer in the same manner, because they are dependent on independent claims 4 and 11, respectively, and thus contain all the limitations of these independent claims. In addition, dependent claims 5 and 12 recite additional novel elements not shown by Bonney and Wucherer.

III. Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited.

Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

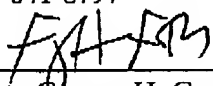
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